

CUMBERLAND RIVER.

LETTER

FROM

THE SECRETARY OF WAR,

TRANSMITTING

The information required by a resolution of the House of Representatives of the 24th ultimo, in relation to the improvements of the navigation of the Cumberland river, &c.

JANUARY 13, 1835.

Read, and referred to the Committee on Roads and Canals.

WAR DEPARTMENT,

January 12, 1835.

SIR: In conformity with the resolution of the House of Representatives of the 24th ultimo, I have the honor to transmit reports from the Engineer Department and the Topographical Bureau.

The drawings and report of the survey shall be transmitted as soon as they are received.

Very respectfully,

Your most obedient servant,

LEW. CASS.

The Hon. JOHN BELL,

Speaker of the House of Representatives.

ENGINEER DEPARTMENT,

Washington, December 30, 1834.

SIR: I have the honor to hand you a report on the improvements of the navigation of the Cumberland river from Nashville to its mouth: to which is annexed a statement of the amounts appropriated and expended for this object, to the 30th September, 1834.

This contains all the information in possession of this department, called for by the resolution of the House of Representatives of the 24th instant.

I am, very respectfully, sir,

Your obedient servant,

C. GRATIOT, *Chief Engineer.*

To the Hon. LEWIS CASS,

Secretary of War.

MEMPHIS, (TENN.)

November 12, 1834.

To Gen. CHARLES GRATIOT, *Chief Engineer*:

SIR: I subjoin a report of the progress made in the improvements on the Cumberland river during the last two years.

The obstructions to the navigation of this stream, for the removal of which appropriations have been made by the General Government, may be classed under three separate heads, differing from each other in their nature, and in the means necessary to be used in overcoming them.

Of the first class are snags, sunken logs, and projecting trees.

Of the second, rocks, whether occurring in detached masses, or in reefs extending across the channel.

The last class consists of gravel, sand, or shell bars.

From the character of the banks of this stream, which are generally rocky, it is subject to none of those changes that render it so difficult to effect permanent improvements on the Mississippi: it may fairly be inferred that, if the snags and logs are once removed, no impediment from such causes is to be apprehended in future.

The second class of obstacles exists only to a limited extent, and, from their nature, can never recur when once destroyed.

The most serious difficulty in the navigation, and that which will require far more time, and the use of more expensive means for its removal, than the other two conjointly, arises from the shoals and bars.

These are, in general, composed of coarse gravel, sand, and shells; sometimes cemented into masses, forming pudding stone, and, at others, lying loose, and changing their position whenever a strong current is brought to bear upon them. The bars usually stretch diagonally across from the convex points where the direction is suddenly changed, or below the mouths of other streams, and at the head of island chutes.

The means of effecting improvements in the navigation of the river, where it is obstructed by the obstacles above named, must vary according to the nature of the obstruction, and do not differ materially from those already described as used on the Ohio for similar purposes.

The snag boat, which has been found so efficient in removing sunken logs and trees on the Mississippi, has been adopted on the Cumberland with like results. It has also proved itself a powerful engine, when properly managed, for removing detached masses of rocks; when these are firmly imbedded in the sand, or are too large to be displaced, they are blasted, and the fragments, being raised by this boat, are carried to the wing-dams, to the construction of which, at Harpeth shoals, they contributed no inconsiderable portion.

Lateral dams have been commenced for removing some of the bars, and have, in general, produced the desired effect, by concentrating the water upon one part of the shoal, and increasing the velocity of the current. In some places, however, even the additional force thus given to the water has been insufficient to produce the expected result, owing to the compact nature of the formation and the size of the gravel; in such situations, it will be necessary to adopt the plan occasionally resorted to on the Ohio, of attaching scrapers to the steamers, and loosen the gravel with them; when once in motion, they are easily carried, by the force of the stream, into the deep places.

Operations were commenced on the Cumberland in October, 1832, with all the hands that could be collected so late in the season. Part of this force, under charge of a suitable agent, was directed to begin at Nashville, and, proceeding down the river, to cut all the projecting trees, and all snags upon dry sand bars, and in the island chutes, where it could be effected.

In December, this part of the work had progressed as far as the foot of Harpeth island, a distance of thirty-six miles. During the same period, the balance of the laborers, under the direction of the superintendent, were engaged in quarrying rocks for the dam at Harpeth shoals; all operations ceased in December, on account of cold weather, and were not resumed until July, 1833, when the work at Harpeth island and the Flax Patch proceeded. These dams were completed, with the exception of one hundred and fifty yards, which, together with some repairs that had become necessary, have been accomplished this summer. A sketch of these works will be forwarded as soon as practicable.

A stratum of rock, averaging eight inches in depth, was taken out of the river between Harpeth island and the right hand shore, throughout the whole length of the island, and deposited in the dams. While these operations were going on, the same agent who had been employed the previous summer was prosecuting the clearing of the banks, which was finished as far as Camp Rowdy in September.

The superintendent commenced this season, in July, with the repairs of Harpeth island dam; in September, he left that place with fifty hands for the Devil's chute and Line island, in consequence of the complaints made of the difficulties experienced at those points.

A material improvement has been effected at the Devil's chute, by the removal of the point of rock on the left hand side of the channel.

At Line island, the dams have been marked out and commenced; the snag boat has been employed in removing the wreck of the steamer President, which sunk directly across the principal chute at this place. This dam will be about one-fourth done by the 15th of next month, beyond which time it will not be practicable to prosecute the work. When the dam at Line island is completed, it is contemplated to move up the river to Nashville, and, in descending, to remove all snags, and sunken logs, and detached rocks which remain, and, also, to construct such wing-dams as are most essential to the low water navigation.

This plan would, in the first instance, have been most judicious, and was only departed from by the superintendent, for reasons already stated—that the obstructions at Line island and the Devil's chute were too important to be suffered longer to remain.

The services of the steamer Virginian have been wholly lost during the latter part of the season, by her accidentally striking a snag in Palmyra island chute, in descending to Line island, by which she was so much injured as to render it necessary to run her ashore. She has since been repaired, and is again afloat, but, from the low stage of water, will not be able to reach her place of destination. Little has been done towards removing the snags and logs from the bed of the river: this will constitute one of the earliest objects to which the attention of the superintendent will be directed the approaching season.

A dam is required at Nashville island to project from the left shore, by which the water will be made to pass down the right hand channel. Dams are also essential on the bars at the following places: Sycamore creek, Harpeth river, Palmyra island, Yellow creek, Bald island, Dover island and shoals, Gatlin's shoals, Phelly's island, and Ingram's shoals, for all which places sketches will be forwarded. There are, also, shoals at other points, which will require attention if the work of improvement is pursued as far as it is capable of being with advantage. Of this class may be mentioned Martin's shoals, Wild Cat shoals, Wills's island, Elk creek, Boyd's shoals, Little river, McKnabb's bar, Big and Little Eddy, Big and Little Horse ford, and a reef of rocks four miles below Camp Rowdy.

At Harpeth, Dover, and Gatlin shoals, the Devil's chute, and the Big Horse ford, there are detached rocks in the channel, which must be removed. When these improvements are completed, there will remain no further means of benefiting the navigation of the Cumberland river from Nashville to its mouth.

In the prosecution of the improvement entrusted to his charge, the superintendent has evinced good judgment, and a thorough acquaintance with the river. Hitherto the operations have unavoidably been too widely extended to produce the most favorable results. It is his intention during the ensuing season to concentrate his forces, and to leave behind him, in descending, no obstructions which it is possible to remove.

I have the honor to be,

Very respectfully,

Your obedient servant,

A. H. BOWMAN,

Lieut. of Engineers.

NOTE.—The sketches referred to in the foregoing report have not yet been received at the Engineer Department.

STATEMENT of the amount appropriated for improving the navigation of the Cumberland river, and the amount expended up to the 30th of September, 1834.

Appropriated in 1832	-	-	-	30,000	00
Do 1834	-	-	-	30,000	00
					60,000 00
Expended up to the 30th September, 1834	-	-	-	29,166	54
Remaining undrawn from the Treasury, and in the hands of the agent	-	-	-	-	30,833 46
Amount in the agent's hands on the 30th September, 1834	-	-	-	6,333	46
Drawn from the Treasury, and remitted to the agent in the fourth quarter of the year	-	-	-	2,000	00
					8,333 46
Remaining in the Treasury 30th December, 1834	-	-	-	\$22,500	00

TOPOGRAPHICAL BUREAU,

December 30, 1834.

SIR: That part of the resolution of the House of Representatives of the 24th instant, referred to this bureau, relates to the extent at which the improvements of the Cumberland river can be carried.

In reply, I have the honor to report, that the survey upon which the answer depends was made during the latter part of last summer; the field work was completed, but at so late a period that the officer by whom it was done has not yet had time to make out the drawings and reports.

I have the honor to be,

Very respectfully, sir,

Your obedient servant,

JOHN J. ABERT,

Lieut. Col. Top. Engs.

Hon. LEWIS CASS,

Secretary of War.



